

REMARKS

Claims 7, 10, 15, 17-25, and 33-36 have been cancelled as shown on pp. 2-5 of the Reply. Thus, claims 1-6, 8-9, 11-14, 16, and 26-32 are currently pending in the subject application and are presently under consideration. In addition, claim 1 has been amended as shown on pp. 2.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. 3-6-08 Telephonic Interview

Initially, applicants' representative wishes to gratefully acknowledge the Examiner's and the Examiner's Supervisor's consideration of the present application *via* a telephonic interview conducted March, 6, 2008. In this regard, Applicant's representative appreciates the Examiner's discussion of the claimed subject matter's limitation, "transmitting a multicast-type message in unicast to the object on demand," in light of Abdelaziz *et al.*, and as it applies to the subject matter of claim 1.

Specifically, it was discussed that Abdelaziz *et al.* fails to disclose transmitting a multicast-type message in unicast to the object. Regarding the outstanding 35 U.S.C. § 102(b) rejection based on Abdelaziz *et al.*, applicant's representative submitted that Abdelaziz *et al.* describes sending either a multicast message or a unicast message, or a combination of either a multicast message or a unicast message, and thus, the applicant's claimed invention overcomes the cited art as described in the specification and as is highlighted in greater detail below. In this regard, applicant's representative especially appreciates the discussion with Examiner's Supervisor regarding how a multicast-type message is sent in unicast. To that end, further specification support is provided below to illustrate one aspect of how one skilled in the art can practice the invention as claimed.

No agreements were reached as to specific teachings of the cited references or form of other amendments.

II. Rejection of Claim 1 Under 35 U.S.C §112

Claim 1 stands rejected under 35 U.S.C §112, first paragraph, as failing to comply with the enablement requirement. Specifically, it is contended that the recited limitation of claim 1, *the object is presumed to be on-line with respect to a second set of one or more of the plurality*

of functions, is not described in the specification. It is further contended that, when no response is received (from the object), the system only presumes that the queried component is off-line, and makes no other presumptions. Applicant's representative respectfully disagrees and submits that the enablement requirements under 35 U.S.C §112, first paragraph, are satisfied. Reconsideration and withdrawal of this rejection is respectfully requested in view of the comments below.

The examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993) (examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure). *See also* MPEP § 2164.04 [R-1]. The standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? *See In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). *See also* MPEP § 2164.01 [R-5].

Applicant's representative respectfully submits that this burden has not been met. For example, it has not been shown why any person skilled in the art to which applicant's invention pertains, after implementing the system limitation, *the object is presumed to be off-line with respect to the first set one or more of the plurality of functions*, could not then implement the system limitation, *the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions*.

Moreover, applicant's representative respectfully submits that adequate enabling disclosure exists in the specification to support the recited limitation of claim 1, *the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions*.

The disclosed subject matter relates to presence tracking for datagram based protocols with search (e.g., network devices) that employs multicast-type messages transmitted in unicast to detect such devices. With the invention, a client application can dynamically determine if a network device is active thereby reducing network traffic related to discovering devices and/or services, and to searching for such devices and/or services. For example, the Universal Plug and

Play specification (UPnP) specifies an M-SEARCH verb that allows a UPnP client application to search for UPnP devices.

In accordance with an aspect of applicant's claimed invention, it is possible to send such M-SEARCH verbs as unicast datagrams to a specific destination device. The destination device can receive the M-SEARCH verb on its port and can treat the multicast-type message as if it was a search request broadcast to all devices. The device can then respond with a directed search response. Accordingly, in the context of the single control object simply needing to know the status of the single target object, the on-demand discovery message is in the format of multicast-type message transmitted as a unicast message to the target object.

Regarding the subject limitation, *the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions*, where a target object is multifunctional, one function may be totally functional while another function is not. *See* p. 5, ll. 20-21. Thus, a target object can be considered to be on-line with respect to a control object when it is in communication with the control object and functioning at the level sought to be statused. *See* p. 5, ll. 17-20. This means that the target object may be considered to be on-line for one desired function, but off-line for another. "For example, if a first control object is interested only in a hardware status of the target object, and only the desired hardware function is operational, it is on-line with respect to that control object." *See* p. 5, ll. 21-24.

"If a second control object is interested only in a status of specific software running on the target object, which specific software is inoperative while the hardware is functional, the target object is off-line from the perspective of that second control object." *See* p. 5, ll. 21-24. Thus, *the object is presumed to be off-line with respect to the first set of one or more of the plurality of functions* (e.g., the software function), *and the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions* (e.g., the hardware function).

"In the context of the single control object 102 desiring status of the single target object 108, and/or one or more embedded objects (110 and/or 112), the on demand discovery process can include sending one discovery message to the target object 108, in response to which the target object 108 replies with the status of the target object 108 and all embedded objects (110 and 112)." *See* p. 6, ll. 19-23. "Alternatively, the status of the target object 108 itself may already be known such that the control object 102 requires the status of one or more of the embedded objects (110 and 112)." *See* p. 6, ll. 25-27. "In this scenario, the control object 102

transmits a discovery message directly to one of the embedded objects (110 or 112), in response to which the targeted embedded object (110 or 112) replies (or fails to reply) in unicast to the control object 102.” See p. 6, ll. 27-30.

Thus, in the event that one of the embedded objects fails to reply, *the object is presumed to be off-line with respect to the first set of one or more of the plurality of functions* (e.g., one embedded object the target object 108), *and the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions* (e.g., the other previously known online embedded objects of the target object 108 or target object 108).

Reconsideration and withdrawal of rejection of claim 1 under 35 U.S.C §112 first paragraph is respectfully requested in view of the comments above.

III. Rejection of Claim 1 Under 35 U.S.C § 112

Claim 1 stands rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, it is contended that the limitation *the response is substantially similar as that for a multicast message* is unclear, and that applicant has not defined the term or given any guidance regarding what a response must be like to be *substantially similar as that for a multicast message*. Applicant’s representative respectfully disagrees and submits that applicant has given sufficient guidance under 35 U.S.C § 112, second paragraph. For example, a destination device receives the M-SEARCH verb on its port and treats the multicast-type message (sent as a unicast datagram) as if it was a search request broadcast to all devices. See p. 6, ll. 25-30. The device responds with a directed search response. *Id.* Thus, *the response is substantially similar as that for a multicast message*, because it can be treated as if it was a response to a multicast message.

As a further example, a destination device 404 receives the M-SEARCH verb on its port and, believing it to be a general request for the device (e.g., a multicast message), treats it as if it was a broadcast M-SEARCH request (e.g., a multicast message). The device 404 then responds with a proper directed search response of “200 OK” (e.g., a unicast response) indicating that it is on-line. Thus, whereas a proper response of “200 OK” to a broadcast M-SEARCH request (e.g., a multicast message) is performed, *the response is substantially similar as that for a multicast message* in that the response of “200 OK” is sent similar to a response for a multicast request.

Reconsideration and withdrawal of rejection of claim 1 under 35 U.S.C §112 second paragraph is respectfully requested in view of the comments above.

IV. Rejection of Claims 1-36 Under 35 U.S.C. § 102(b)

Claims 1-36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Abdelaziz *et al.*, U.S. Patent 7,197,565, (hereinafter “Abdelaziz”). Claims 7, 10, 15, 17-25, and 33-36 have been cancelled as shown on pp. 2-5 of the Reply. Thus, claims 1 and 26 are the pending independent claims. Reconsideration and withdrawal of the rejection of claims 1 and 26 (and associated dependent claims 2-6, 8-9, 11-14, 16, and 27-32) under 35 U.S.C. § 102(b) is respectfully requested in view of the comments below.

For a prior art reference to anticipate, 35 U.S.C. §102 requires that “*each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (quoting *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)) (emphasis added).

As described above, applicant’s invention provides target object presence tracking that employs *multicast-type messages transmitted in unicast* to detect such target objects, where the messages are of a multicast type but are transmitted in unicast to a specific object, rather than to multiple objects as would be the case for traditional multicast messaging.

For example, the Universal Plug and Play specification (UPnP) specifies an M-SEARCH verb that allows a UPnP client application to search for UPnP devices. *See, e.g.*, p.2, ll. 19-20. Rather than sending such a multicast type messages as a multi-cast datagram, in accordance with an aspect of applicant’s claimed invention, it is possible to send such M-SEARCH verbs as unicast datagrams to a specific destination device. *See, e.g.*, p.2, ll. 25-26. The destination device can receive the M-SEARCH verb on its port and can treat the multicast-type message as if it was a search request broadcast to all devices. *See, e.g.*, p.2, ll. 26-28. As a result, applicant’s invention provides target object presence tracking that employs *multicast-type messages* (e.g., such as M-SEARCH verbs) *transmitted in unicast* to detect such target objects (e.g., send the

normally utilized multicast-type message only to the one target object) to prompt a response from the selected target object. *See, e.g.*, p.9, ll. 25-29.

As a further example, referring to Figure 3D, there is illustrated a sample UPnP protocol stack 328 used to send a multicast-type discovery datagram in unicast in accordance with the present invention. *See, e.g.*, p.14, ll. 26-28. The layers 302 and 304 are hosted in UPnP-specific protocols by the device architecture layer 306. *See, e.g.*, p.14, l. 31 to p.15, l. 3. Here the discovery request is delivered *via* a unicast variant of an HTTP layer 330 that uses an extension using SSDP methods headers. *Id.* The discovery response is delivered *via* a unicast variant of an HTTP layer 332 that has also been extended with SSDP. *Id.* The UDP layer 314 indicates that the HTTP data (330 and 332) is delivered *via* UDP over IP, as further indicated by the layer 318. *Id.* Referring to Figure 4, there is illustrated a flow diagram 400 between a UPnP client application 402 and a UPnP device 404 when the UPnP device 404 comes on-line. *See, e.g.*, p.15, ll. 4-6. For discovery, the client 402 can use a GENA *NOTIFY* verb (multicast-type message) transmitted over the HTTP protocol as described. *Id.*

In contrast, Abdelaziz merely discloses a decentralized mechanism for detecting the presence of entities in a peer-to-peer networking environment. To that end, Abdelaziz discloses the notion of a communications channel as a pipe for an entity on a peer node. Thus, pipes are described as providing the primary channels for communication among peers and a mechanism for establishing communication between peers. Abdelaziz further describes pipes used as communication channels for sending and receiving messages between services or applications over peer endpoints. Communicating over the pipe may include sending messages formatted in accordance with one or more peer-to-peer platform protocols over the pipe. Messages define an envelope to transfer any kinds of data.

Thus, Abdelaziz describes generating a unique identifier that is assigned to the peer-to-peer network entity and pipe advertisement for a peer-to-peer network entity for peer-to-peer presence detection. Accordingly, a pipe advertisement describing the entity and the pipe and corresponding to the unique identifier of the entity may be generated as the identity of the entity. In addition, the entity may be moved or otherwise migrate to one or more other peer nodes to be hosted by the other peer nodes. However, Abdelaziz fails to disclose aspects of applicant's claimed invention.

In this regard, independent claims 1 and 26 facilitates determining the presence of an object on a network. In particular, independent claims 1 and 26 recite the similar limitation: ***transmitting a multicast-type message in unicast to the object***. Figure 15 and column 28, lines 15-23 are cited for support that Abdelaziz discloses transmitting a multicast-type message in unicast to the object. However, the indicated portions, as well as throughout the cited reference, fail to disclose this aspect of applicant's claimed invention.

For example, column 28, lines 15-23 describe pipes as being indiscriminate (may support binary code, data strings, Java technology-based objects, and/or applets, among others). Abdelaziz describes that any number of unicast and multicast protocols and algorithms, and combinations thereof, may be used. *Id.* Applicant's representative respectfully submit that allowing for any number of unicast and multicast protocols to be used, or combinations thereof, does not expressly or inherently describe ***transmitting a multicast-type message in unicast to the object*** to determine presence of an object as applicant's claim.

As a further example, Abdelaziz' Figure 15 depicts using messages to discover advertisements. As described above, communicating over the pipe may include sending messages formatted in accordance with one or more peer-to-peer platform protocols over the pipe. However, "[r]egardless of transport, messages may be unicast (point to point) between two peers *or* may be propagated (like a multicast) to a peer group." *See* Col. 34, ll. 46-48 (emphasis added). Thus, as depicted in Figure 15, Abdelaziz describes messages used to discover advertisements either with "(propagate message 230) *or* alternatively a rendezvous peer (a unicast message 232)." *See* Col. 73, ll. 22-24 (emphasis added). Accordingly, applicant's representative respectfully submits that using *either* multicast messages *or* unicast messages does not explicitly or inherently disclose ***transmitting a multicast-type message in unicast to the object*** to determine presence of an object as applicant's claim. Reconsideration and withdrawal of the rejection of claims 1 and 26 (and associated dependent claims 2-6, 8-9, 11-14, 16, and 27-32) under 35 U.S.C. § 102(b) is respectfully requested in view of the comments above.

Moreover, claim 1 as previously amended recites "the object having . . . a plurality of functions capable of independent presence indication associated therewith and . . . if a response is not received, the object is presumed to be off-line with respect to the first set of one or more of the plurality of functions, the object is presumed to be on-line with respect to a second set of one or more of the plurality of functions" Because Abdelaziz is silent with respect to such

functionally granular presence detection, Abdelaziz cannot be said to explicitly or inherently disclose this aspect of the claimed invention. On this additional basis, the rejection of independent claim 1 (and associated dependent claims 2-6, 8-9, 11-14, and 16) under 35 U.S.C. § 102(b) should be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendment. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP506US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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